

FOREIGN ACCENT AND BILINGUALISM*

Eva Wigforss

"Bilingualism...may be all degrees of accomplishment, but it is understood here to begin at the point where the speaker of one language can produce complete, meaningful utterances in the other language."
(E. Haugen, 1953: The Norwegian Language in America I, p. 6.)

INTRODUCTION

During the past decade there has been a steep rise in the number of immigrants coming to Sweden. The total number of immigrants in Sweden was estimated in 1974 to be 600,000. Of these a large porportion are children aged between 0 and 10. All children in Sweden are confronted with the compulsory school system at the age of seven and most of them will also have to attend compulsory nursery school in the future.

Since the school system is monolingual it causes a great language problem for those children who are not native Swedish speakers. In an attempt to ease the difficulties of those children who have another mother tongue than Swedish, the new supplement to the National Curriculum (Lg 69) provides that every immigrant child has the right to at least two hours a week of instruction in his mother tongue. The National Board of Education supports a project at the Department of Education (University of Lund) that aims find better instructional models for bilingual teaching and development.

This project: "Models for the bilingual instruction of immigrant children" has as a principal goal to ensure that the instruction of immigrant children in Sweden should aim at functional bilingualism for the pupils.

The main aims of the project can be summarized briefly under the following headings:

1. To investigate bilingual learning with reference to the functions and mutual relationship of the languages.

* This research was supported by the National Board of Education in Sweden, through the project "Models for bilingual instruction of immigrant children" at the Department of Education, University of Lund.

2. To design organizational models and to compile methodological guidelines for the bilingual instruction of immigrant children.
3. To arrange practical trials of these models in collaboration and consultation with the Malmö local authority.
4. To carry out a step-by-step evaluation of the practically tested models.

(School Research 1973:8)

Four groups of Finnish immigrant children in Malmö (the biggest city in southern Sweden) are being studied. The instructional models in the form so far evolved can be described as follows:

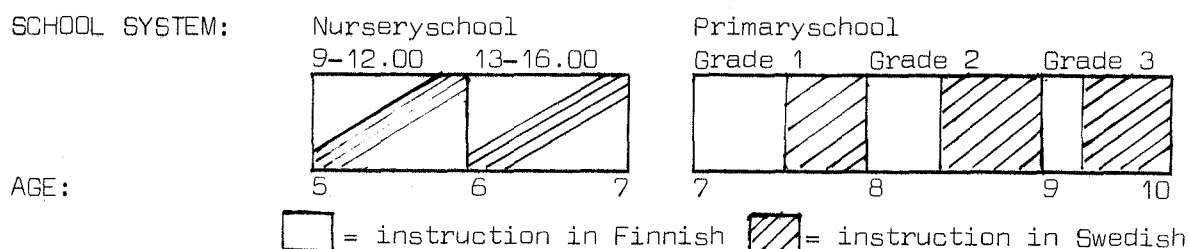


Figure 1. From 5 to 7 the child attends a monolingual Finnish nursery school for three hours a day. During this period a Swedish language teacher is present one hour a day to train the children individually or in small groups in the Swedish language. In grade 1 they will first have to learn to read and write in Finnish while Swedish reading and writing are not introduced until the end of the first grade. In the second and third years Finnish is successively diminished.

Since the project has a longitudinal scientific approach, bilingual development cannot be evaluated in one year and four groups of children at different ages are therefore being followed through the models. These groups are as follows: group A (born 1966), group B (born 1967), group C (born 1968) and group D (born 1969). Thus we follow the children from the ages of 5 to 10. The longitudinal research program is outlined below:

School-system:	age	Group of children:			
		A	B	C	D
Nursery school	(5)		1972/73	1973/74	1974/75
Nursery school	(6)	1972/73	1973/74	1974/75	1975/76
Grade 1	(7)	1973/74	1974/75	1975/76	1976/77
Grade 2	(8)	1974/75	1975/76	1976/77	1977/78
Grade 3	(9)	1975/76	1976/77	1977/78	1978/79

Figure 2. Different terms are tabled above. It should be noticed that group A's first nursery school year started at 6 and that the group of children this first year was scattered between three Swedish nursery schools, but had regular training in Finnish every day.

The evaluation of these models is interdisciplinary, since so many factors are involved in a pupils bilingual and bicultural development. The evaluation is also characterized by a longitudinal approach (fig. 2) and is based on case studies, since the number of children in each group is very small (about 15 children).

BILINGUALISM

Linguists have traditionally viewed bilingualism as "languages in contact", that is, as the interaction between two language systems that otherwise exist in a "pure" state and that have been brought into unnatural contact with each other. Thus the main research focus has been laid on interference between the language systems involved and not enough emphasis laid on the investigation of the actual competence in the two languages. It is also unfortunate that little empirical research has been made into the linguistic development of Swedish and Finnish children (Hadding K. 1974).

Attempts to describe the linguistic competence of bilinguals have so far been made through measurements of their vocabulary, speed of translation between the two languages and pronunciation; but very little has been done in the area of syntactical and communicative competence in bilinguals. There will be a need in the future for empirical psycholinguistic and sociolinguistic research to find out how a bilingual uses his ability in a bilingual speech community. Results from interference studies

are often based on error analysis, either in first language (L1, mother tongue) or second language (L2) performance. In the following, very preliminary analysis, I have used this methodology for a contrastive analysis of the phonetic structures of Finnish and Swedish.

I believe the main problem here is not so much to describe the character of interference as to interpret the errors. Some tentative attempts at such an interpretation have been made at the end of the article.

PRONUNCIATION AND FOREIGN ACCENT

Pronunciation should be viewed as a complicated interaction between the articulatory and perceptive system in man. Is it possible for someone to produce a speech sound that he cannot perceive as a speech unit, or vice versa? What role does imitation play in the act of learning the correct pronunciation of a language? Are there critical ages for articulation (and perception) after which it is more difficult to change a pronunciation pattern? There are many such questions that can be raised around the extent to which pronunciation can be affected by external or internal factors. So far we can only pose the questions!

Usually we consider a child of 4 - 5 years old as fully competent in the pronunciation of his mother tongue. There could of course be exceptions for such phonemes as Swedish /s/, /l/ and /r/ that children may not learn to master completely until the age of 6. But generally the prosodic patterns are well established before this. However, recent findings by Irwing (1974) have shown that the accurate articulation of speech sounds improves progressively as the child increases in age up to 7 and it would appear that the maturational process has possibly culminated before the age of 8. The auditory perception of speech sounds also progresses with age, with the most significant improvement between 5 and 7, for the identification of speech sounds in a word spoken by himself or someone else. This finding indicates that the perceptive and productive system in a child is not fully developed until the age of 8. After this age there seems to be no further progress. This has great relevance for bilingual development.

Foreign accent should here merely be treated as a mispronunciation manifested in an acoustic deviation from the idiomatic norm of a language

or a dialect. Though in some cases it is easy to state that a person has a foreign accent, it can be very difficult to state the exact nature of this accent from an auditive analysis alone. But this paper only aims to give a very general survey and the material will be subjected to acoustic analysis at a later date. It should be emphasized that prosodic factors (as for example intonation) are carriers of both syntactic and semantic information in the linguistic message and indications of extralinguistic factors such as attitudes, speech mode etc. One of the conclusions from "Acoustico-phonetic studies in the intonation of Southern Swedish" (Hadding-Koch 1961) was that "intonation is an important instrument for expressing the syntactical relation between utterances and parts of utterances." It is also important to bear in mind that a foreign accent cause misunderstanding at all linguistic levels as well as at psycholinguistic and sociolinguistic levels.

A CONTRASTIVE ANALYSIS OF THE PHONETIC STRUCTURE OF FINNISH AND THE MALMÖ DIALECT

There are many differences between the south Swedish dialect and Finnish. We shall here examine some vowel, consonant, prosodic and phonotactical differences. No further analysis of different Finnish dialects will be offered here since most of the children in the study have a dialect that does not differ in any essential way from standard Finnish as it is spoken in the Helsinki area. All phonetic notation is from The Principles of the International Phonetic Association (IPA 1949), but some symbols are supplemented by the use of diacritics.

It should also be emphasized that generally the Swedish sound system is more elaborate than the Finnish; that is, it contains more speech units.

Vowel phonemes:

The main differences between the vowel systems are:

- (i) that the Malmö dialect has two more vowels than standard Finnish; namely /u:/ as in /hu:s/ (Eng. "house") and /ü/ as in /hünd/ (Eng. "dog"). The first vowel is long and the second short.
- (ii) that when vowel length in the Malmö dialect is manifested

qualitatively it is quantitative in Finnish. Very often the lengthening of a vowel in Malmö is accompanied by diphthongization (Bruce 1970).

- (iii) that there are differences in duration between long and short vowels in Finnish and in Swedish (Reuter 1973).

Vowel systems of Finnish and Swedish:

Finnish:	FRONT				CENTRAL	BACK	
	unrounded		rounded		rounded	rounded	
	long	short	long	short	short	long	short
Close	/i:/	/i/	/y:/	/y/		/u:/	/u/
Half-close	/e:/	/e/	/ø:/	/ø/		/o:/	/o/
Half-open	/æ:/	/æ/					
Open						/ɑ:/	/ɑ/
Swedish:							
Close	/i:/	/i/	/y:/	/y/		/u:/	/ʊ/
Half-close	/e:/	/e/	/ø:/	/ɯ:/	/ɥ/	/o:/	
Half-open	/ɛ:/	/ɛ/		/œ/			/ɔ/
Open		/a/				/ɑ:/	

Figure 3. It should be noted that this only gives a very superficial view of the two systems, and it is difficult to grasp the qualitative differences between the vowels. The vowel *ɯ:/* in the Swedish diagram has stronger liprounding than the vowel */ø:/*.

Diphthongs:

There are 18 phonemic diphthongs in standard Finnish. The diphthongs of the Malmö dialect may occur both as phonemes and as allophones of the long vowels (Bruce 1970). It should be noted that the Finnish diphthongs may vary considerably from dialect to dialect.

The differences between the diphthong systems of the two languages will be explored further in coming reports, though a list of them is presented below.

The Finnish diphthongs are:

/ie/, /uo/, /yɸ/, /ai/, /oi/, /ui/, /ei/, /æi/, /ɸi/, /yi/, /au/, /ou/,
/eu/, /iu/, /ɸy/, /æy/, /ey/, /iy/.

The Malmö dialect diphthongs are:

/i:/ — /eî/	/y:/ — /ɸŷ/	/u:/ — /eû/
/e:/ — /Êe/	/ɥ:/ ¹ — /ɸɥ̂/	/o:/ — /Êo/
/E:/ — /æ̂E/	/ɸ:/ — /æ̂ɸ/	/a:/ — /æ̂a/

(This transcription according to Bruce 1970; p. 9.)

Consonant structure:

The main differences between the consonant structures are:

- (i) in Finnish there are phonemic contrasts between long and short consonants, this difference is phonotactically related to the shortening and change in quality of the preceding vowel in Swedish. That is all Finnish consonants except /h/, /j/ and /v/ have a phonemic quantity, unlike Swedish consonants.
- (ii) the following Swedish consonants are not present in the Finnish structure:

Voiced stops: /b/ and /g/ (they may occur in loan words spoken by educated people)

/d/ is mostly realized as voiceless in dialects.

Voiceless fricatives: /f/, /ç/, /ʃ/ are not present at all.

Liquid: /R/ (that is the Malmö dialect uvular /r/)

Voiced stops: /b/ and /g/ (they may occur in loan words spoken by educated people),

/d/ is mostly realized as voiceless in dialects.

Voiceless fricatives: /f/, /ç/, /ʃ/ are not present at all.

Liquid: /R/ (that is the Malmö dialect uvular /r/).

- (iii) the voiceless stops in Finnish; /p/, /t/ and /k/, have no aspiration as they have in some positions in Swedish.

1 /ɥ/ is equal to /u:/ in the vowel system above.

The following diagram shows the articulatory differences between the two consonant systems:

FINNISH:

PLACE OF ARTICULATION	MANNER OF ARTICULATION						
	STOP		FRICATIVE		NASAL	LIQUIDS	RHOTIC
	voiced	voiceless	voiced	voiceless			
Labial:	long /p:/	short /p/			/m:/		
Labio-dental:			/v/				
Dental:	long /t:/	short /t/					
Alveolar:	long /s:/	short /s/			/n:/	/l:/	/r:/
Palatal:			/j/				
Velar:	long /k:/	short /k/			/ŋ:/		
Glottal:				/h/			

SWEDISH:

Labial:	/b/	/p/			/m/		
Labio-dental:			/v/	/f/			
Dental:	/d/	/t/			/n/	/l/	
Alveolar:				/s/			
Palatal:			/j/	/ʃ/			
Velar:	/g/	/k/		/β/	/ɣ/		/R/
Glottal:				/h/			

Figure 4. A classification of Finnish and south Swedish consonants by place and manner of articulation.

Phonotactic information:

The main phonotactic differences between the languages are:

- (i) Finnish has no initial or final consonant clusters, whereas in Swedish consonant clusters of two and three are permitted both initially and finally in words. For example the Swedish words

strand (Eng. "beach") is ranta in Finnish the Swedish consonant cluster /str/ having been reduced to /r/.

- (ii) in native Finnish words, vowels occur in a harmony system according to following rules:
- A. Back vowels /a(:)/, /o(:)/ and /u(:)/ occur together
 - B. Front vowels /y(:)/ /ø(:)/ and /æ(:)/ occur together
 - C. Front vowels /i(:)/ and /e(:)/ can occur with both A and B.
- As an example of vowel harmony we can see how it works with the locative endings for "in" as in talo (Eng. "house") - talo-ssa ("in the house") and kylä (Eng. "village") - kylässä ("in the village"). There is no such harmony in Swedish.
- (iii) /h/ may occur only initially in Swedish and not as a part of a consonant cluster. In Finnish it may occur before other consonants as in Lahti (town in Finland).

Prosodic information:

There are three main differences in this area:

- (i) Intonation: there are two different kinds of tonal accent in Swedish, usually denoted "acute" and "grave" (Hadding 1961) whereas in Finnish there is only one, acute (that is similar to the Swedish acute).
- (ii) Stress: normally the first syllable is stressed in Finnish words. Swedish stress rules are more complicated.
- (iii) Quantity: according to the Swedish quantity rule a stressed syllable should either contain a long vowel, or a short vowel + a long consonant as for example in /m'a:t/ (Eng. "feed") and /m'äta/ (Eng. "carpet"). In Finnish a stressed syllable could well contain a short vowel and a short consonant as in /tu'li/ (Eng. "fire").

There are different temporal relations between the vowels and consonants in Finnish and Swedish words. The exact nature of these relations has to be determined through instrumental analysis. Some research has been done in this area by Jonasson and McAllister (1972) who have investigated the

temporal relations between vowels and consonants
in Swedish and English.

Much more must of course be added for an exhaustive contrastive phonetic analysis of the two languages, but for the present this is sufficient.

METHOD

Material:

Several tests have been designed in order to obtain the widest possible grasp of what constitutes a foreign accent, that is, to find out how and under what circumstances it appears. Equal tests for both languages were designed.

Tests I and II: Two articulation tests were devised, based on the most frequent phonetic and phonotactical units in Finnish and Swedish. Each test consists of 61 items. Drawings and paintings of objects are shown to the child who is asked to name the objects in the language being tested. Both test I and II consist of the same pictures, though given in different presentations and order. I tried to find words that are known to most 3-4 year old Swedish and Finnish children. More difficult words are mixed with easier words (that is, more frequent in the children's languages). The examples below illustrate this:

Test I (Swedish version): Item 4. apa ("monkey") 5. vingar ("wings")
6. fjäder ("feather") 7. ekorre
("squirrel")

Test II (Finnish version): Item 7. saksit ("scissor") 8. suihko
("shower") 9. ruisko ("squirt")
10. joulukuusi ("Christmas tree")

The tests will be described and treated in more detail in forthcoming reports.

Test III and IV: In order to collect spontaneous fluent speech under compatible forms four pictures were drawn.

Test IIIa and IIIb with Swedish instructions; (a) a view of a Swedish garden with children playing, drawn to resemble their own neighbourhood; and (b) a picnic in the countryside. Picture IIIa has the following instructions: 1. "I have drawn a picture that I tried to make as like your garden as possible. Is it right?" 2. "What are they doing in the picture?"

Picture IIIb has the following instructions: 1. "What are they doing in the picture?" 2. "Have you ever been on a picnic? Tell me about it!" Test IVa and b; with Finnish instructions; (a) a living room and (b) a child's bedroom.

Picture IVa has the following instructions: 1. "I have tried to draw a picture that resembles your living room. Is it right?" 2. "What are they doing in the picture?" Picture IVb has the following instructions: 1. "What are they doing in the picture?" 2. "What is your bedroom like? Tell me about it!"

The different subjects of the four pictures were chosen for their bilingual environment. In their home the children mostly speak Finnish and in the garden they have to use the Swedish language to communicate with other children. This choice of subject is intended to create the best possible setting for each language.

Some objects in the pictures are the same as in the articulatory tests; for example "dog, cat, ball". This is to see whether pronunciation differs in spontaneous speech.

The testing interval for each picture is five minutes and there is wide variety as to how these minutes are used by the individual child. Some children can speak fluently for five minutes about the picture while others use only single words. The test situation depends on some of these effects.

These four tests are given regularly to each child in Oct-Nov and April-May.

Subjects:

All four groups of children were included in the four tests. All of the children have Finnish as their mother tongue and their competence in Swedish differs over a wide range from those who speak Swedish fluently to those who only know a few words.

The experimental group consists of 14 five-year-old children, 15 six-year olds, 6 seven-year olds and 15 eight-year olds. This makes a total of 50 children (23 are girls and 27 boys). The subjects and their background are partly described in Aronsson and Wigforss (1974; The bilingual nurseryschool in Malmö 1973-74).

Procedure:

The Finnish tests were given by one of the teachers in the nursery school who was quite well known to all children. The Swedish tests were given by the Swedish teacher in the nursery school and by myself in the primary school. Test sessions were tape-recorded on a Nagra and I made simultaneous notes during all test sessions except those I lead myself. The child's behaviour was also noted during test sessions. The tapes are of a high quality and will be subjected to instrumental phonetic analyse at a later date.

RESULTS

The results very briefly presented here are sampled from the first auditory analysis of the tape recordings from the four tests. I have tried to collect as many phonetic errors in the Swedish performances as I could find in the material, but I do not wish to claim that they are the only errors or that they have always been correctly perceived. The ear is a subjective tool.

This analysis, superficial though it is, will however lead to some tentative hypotheses, after which I will continue with further investigation of the material.

1. The first very remarkable thing that appears in the material is that some of the linguistic performances in the classroom are amazingly free from foreign accent. We can call this performance classroom-phrases. Most of these phrases have a very heavy south Swedish dialect accent of the following type:

Sw. [gɛ̃e mæ̃ẽ j gʋmi:t] (Eng. "give me the rubber eraser") or Sw. [væ̃ẽ ty'st] (Eng. "be quiet").

Even if I have not yet found evidence in my material that isolated words from those phrases will also be correctly pronounced in other contexts, I strongly suspect that this will not be the case. I believe these phrases are due to imitation and some of the single phonetic units cannot yet be used in a productive manner in the child's phonological system.

2. Frequent errors in the pronunciation of vowels are misarticulations of:

(i) the vowel /u:/ in for example Sw. /ru:t / (Eng. "window"). In

Swedish we have the following contrasting pairs: /ri:ta/ (Eng. "to draw"), /ry:ta/ (Eng. "to roar") /re:ta/ (Eng. "to tease"), /rɸ:ta/ (Eng. "decay"), /ru:ta/ (Eng. "window") and /ru:ta/ (Eng. "to dig up"). All of these words are quite frequent so it is important to give the vowel its right quality. In the Finnish vowel system there is no such vowel as /u:/ and a comparison will give us the following pattern:

Swedish has phonemically	/y:/	/u:/	/u:/
Finnish has phonemically	/y:/		/u:/

This aspect causes considerable trouble for Finnish speakers not only regarding the pronunciation of the missing /u:/ but also of the other two vowels. My impression of the children's mispronunciation of /u:/ is that it seems too retracted and insufficiently rounded. A spectrographic analysis will probably reveal the more exact relation between these three vowels.

- (ii) All long vowels seem to have much longer duration than the idiomatic long vowels of the Malmö dialect. Nor do they have the right quality apart from /i:/, /e:/ and /ɛ:/.
 - (iii) The vowel /a/ as in /tand/ (Eng. "tooth") is very often produced as a shortening of the long /a:/ vowel (i.e. too dark).
3. Frequent errors in the pronunciation of the consonants are:
- (i) Failure to aspirate voiceless stops.
 - (ii) No distinction between voiced and voiceless stops; all stops are voiceless. For example [pɔl] for [bɔl] (Eng. "ball"); [int̪i:ɑn] for [ind̪i:ɑn] (Eng. "indian") and [k̪las] for [g̪las] (Eng. "glass").
 - (iii) The following voiceless fricatives are mispronounced:
 - /s/ → [s] or [f] as in /s̪e:d/ (Eng. "spoon")
 - /ç/ → [s] or [k] as in /çyrka/ (Eng. "church")
 - (iv) The lateral /l/ is often pronounced retroflexed, which gives it a very strange character for the Malmö dialect.
 - (v) The liquid, uvular [R] is mostly realized as a Finnish alveolar [r].
 - (vi) The durations of the individual consonants are often longer than the surrounding segments. This could be due to stress too, and an instrumental analysis will show whether this is the case or not.
4. Frequent phonotactic errors are:
- (i) the deletion of one or more consonants in initial consonant

clusters for example /sku:/ --- [ku:] (Eng. "shoe") where /s/ is deleted.

- (ii) use of vowel harmony, most frequently in the addition of Finnish syntactical endings to Swedish words as [ru:se:ngo:rdista] ("in Rosengård", a part of Malmö).

5. Frequent prosodic errors are:

- (i) a very heavy stress on the first syllable in words that sometimes makes comprehension impossible.
- (ii) use of only one tonal accent, the acute. The exact nature of how this affects the acoustic output has to be investigated instrumentally.
- (iii) overall temporal relations that are neither Finnish nor Swedish, such as the relation between consonants and vowels which seems to vary unsystematically whereas in idiomatic Swedish there is a fairly constant relation between the vowels and consonants in a word.

CONCLUSIONS

The results are a few examples taken from the entire material. No case study based analysis has yet been done which would indicate whether or not errors are consistent from one individual to another. This bilingual group will probably show a great variety of errors, some being integrated parts of their performance and others due to occasional mistakes.

It should once more be emphasized that this is a very preliminary analysis. But nevertheless I think it is already possible to find three kinds of children, grouped around the kind of foreign accent they have. A very tentative grouping could look like this:

- Group I Children who speak Swedish fluently and have a very typical south Swedish pronunciation. Most of these children have met the Swedish language at a very early age, through sisters and brothers or Swedish playmates. Some of them have probably started to communicate in Finnish and Swedish at the same age.
- Group II These children have a very slight accent that is mostly characterized by misarticulations of /ü/ as in /hünd/ (Eng. "dog") and /ʃ/ as in /ʃe:d/ (Eng. "spoon") and /ç/ as in /çyrka/ (Eng. "church"). Most of them have probably met and

learned Swedish before the age of 5, i.e. before they began to attend the Finnish nursery school; they were otherwise fluent in Swedish.

Group III These children have a very strong foreign accent, manifested through errors in both phonemic and prosodic patterns. Most of them often make all the errors described in the results. It is very easy to hear that they have a Finnish accent, since they place a heavy stress on the first syllable in words. Sometimes it is very difficult even to understand the exact nature of a word.

This group of children has not met Swedish as a communication language (except through TV). They have difficulties in understanding sentences and even words in Swedish.

If it is possible to group bilingual children in this fashion, this raises several interesting questions for teaching. Will these group differences remain through our instructional models? Will the third group still retain their foreign accent as adults?

Can we talk about critical ages for children, after which they cannot acquire a bilingual pronunciation that is free from accent? How important is it for a future bilingual to have met the intonational pattern of his second language before the age of 5?

The longitudinal approach based on case studies of the project may give some of the answers to these questions.

REFERENCES

- Aronsson K. and Wigforss E. 1974. Den tvåspråkiga lekskolan i Malmö 1973-74. Report from the Institute of Education, University of Lund, No 53
- Bruce G. 1970. Diphthongization in the Malmö dialect. Working Papers 3: 1-20. Phonetics Laboratory, University of Lund
- Dahlstedt K. 1967. Svårigheter i svenskans uttal: En handledning vid undervisningen av finska, tyska och jugoslaviska invandrare. Modersmålslärarnas förening, Lund

- Fishman J. 1970. Sociolinguistic perspective of the study of bilingualism. Linguistica 39:21-49
- Hadding-Koch K. 1961. Acoustico-phonetic studies in the intonation of southern Swedish. Travaux de l'Institut de phonétique de Lund, III.
- Hadding K. 1974. Barnets språktillägnande. Mimeo. Phonetics Laboratory, Lund
- Hadding-Koch K. and Studdert Kennedy M. 1963. A study of semantic and psychophysical test responses to controlled variations in fundamental frequency. Studia Linguistica XVII p. 65-76
- Hansegård K.-E. 1968. Tvåspråkighet eller halvspråkighet. Stockholm: Aldus/Bonniers
- Haugen E. 1953. The Norwegian Language in America I
- Haugen E. 1965. Bilingualism in the America: A bibliography and research guide. University of Alabama press
- Irwin R. 1974. Evaluating the perception and articulation of phonemes of children, ages 5 to 8. Journal of Communication Disorders 7: 45-63
- Johanesson I. 1974. Aims and goals for bilingual - bicultural education. Unpublished paper. Department of Education, Lund
- Johansson F.A. 1973. Immigrant Swedish phonology. Travaux de l'Institut de linguistique de Lund, IX
- Jonasson I. and McAllister R.H. 1972. Foreign accent and timing: an instrumental phonetic study. Papers from the Institute of Linguistics, University of Stockholm (PILUS) 14: 11-40
- Kangas T. 1973. Val av undervisningsspråk - forskning eller politik? Nordisk psykologi 25 (2): 105-112
- Karlsson F. 1969. Suomen yleiskielen segmentaalifoneemien paradigma. Virittäjä 4. Helsingfors
- Mackey Wm.F. 1965. Bilingual interference: its analysis and measurement. Journal of Communication 15: 239-249
- Reuter M. 1971. Vokalerna i finlandssvenskan: en instrumentell analys och ett försök till systematisering enligt särdrag. Festskrift till Olav Ahlbäck 28.3.1971

Reyter M. 1973. Kvantitetsförhållanden i Helsingforssvenskan. Folkmåls-
studier XXIII: 214-224

School Research 1973:8. Newsletters, current project, Models for the
bilingual instruction of immigrant children

Weinreich U. 1963. Languages in contact: Findings and problems. Second
printing. The Hague, Mouton

Wiik K. 1965. Finnish and English vowels. Åbo